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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,553	01/21/2004	Jun-hyeong Kim	Q79172	8636

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EXAMINER	
CHOU, ALBERT T	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)	
	10/760,553	KIM, JUN-HYEONG	
	Examiner	Art Unit	
	Albert T. Chou	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,11-14 and 16* is/are rejected.

7)☒ Claim(s) *9,10 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 5, 6 and 16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 5 recites "*the VPN processor is configured to send a response message to the second private network if the tunnel setup request message comprising a network address of the second private network and a second network address to be used in the VPN tunnel as a network address of the second private network is received,* ***the response message comprising a network address of the first private network, the second network address, and a third network address to be used in the VPN tunnel as a network address of the second private network***".

The recited limitation,***" the response message comprising a network address of the first private network, the second network address, and a third network address to be used in the VPN tunnel as a network address of the second private***

network", conflicts with descriptions in paragraphs [0078], [0079], [0092] and [0093] of the specification or is not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 6 and 16 recites the limitation "*The gateway as claimed in claim 2, wherein the web server comprises a middleware server*". There is no description or supporting evidence found in the specification that the web server comprises a middleware server.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 recites "*The gateway as claimed in claim 3, wherein the tunnel setup request message comprises a network address of the second private network and a second network address to be used for the network address of the second private network in the VPN tunnel*". It is unclear which one of two tunnel setup request messages (recited in claim 3) claim 4 refers to.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,226.751 to Arrow et al. ("Arrow") in view of US Patent No. 7,209,479 to Larson.

Regarding claim 1, Arrow teaches a gateway **[Fig. 1; VPN Unit/Router]** comprising:

at least one public network interface connected to a public network **[Figs. 1 & 7; VPN Unit 115/Public Interface 717 to Public Network 100]**;

at least one private network interface connected to a private network **[Figs. 1 & 7; VPN Unit 115/Private Interface 719 to LAN 110]**; and

a control unit **[Fig. 7; Operating System 116]** linked to the public network interface and the private network interface, wherein the control unit is configured to set up a virtual private network (VPN) tunnel **[Fig. 8; VPN setup and creation; col. 11,**

lines 1-49] by communicating with a gateway **[Figs. 1 & 7; VPN Unit 125]** of a second private network **[Fig. 1; LAN 120]** connected to the public network, and

wherein the control unit is configured to create a new network address table in order for the first and said second private networks to use different network addresses in the VPN tunnel **[Fig. 7, Address Translation Unit 731; col. 10, lines 31-42; Fig. 8, step 816, col. 11, lines 37-48]**, and translate addresses based on the new network address table and forward data packets transmitted from the host connected to the first private network **[Fig. 7, Address Translation Unit 731 & Routing Module 722; col. 10, lines 3-7, 31-42]** or from the second private network, if the first and second private networks have the same network address **[Fig. 7, Address Translation Unit 731; col. 10, lines 31-42; Fig. 8, step 816, col. 11, lines 37-48]** or a network address of one of the first and second private networks is included in a network address of the first and second private networks.

Arrow does not expressly teach a tunnel setup request is received from a host connected to a first private network to set up a tunnel to the second private network.

Larson teaches a tunnel setup request is received from a host connected to a first private network to set up a tunnel to the second private network **[Abstract & Fig. 4; a virtual private network is created by sending a request from a first VPN device to a second VPN device for establishing a VPN between the first and second devices; Col. 8, lines 45-63]**.

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify Arrow's centralized management approach in view of Larson's distributed management alternative since both inventions are related to VPN gateway devices.

The motivation for modifying Arrow's VPN unit or gateway device is to enable a local system administrator to initiate a VPN tunnel setup from a remote location, as opposed to the completely centralized management approach, and improve the overall flexibility of VPN network configurations and operations.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 3, 6-8, 11-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,226.751 to Arrow et al. ("Arrow") in view of US Patent No. 7,209,479 to Larson and further in view of US Patent Application Pub. No. 2003/0028650 A1 by Chen et al. (hereinafter "Chen").

Regarding claims 2 and 7, Arrow, in view of Larson, teaches the control unit comprises:

a graphical user interface to provide a tunnel setup request page in order for the host connected to the first private network to initiate the tunnel setup request **[Larson: Fig. 5; GUI Interface 500 for administering VPNs; col. 10, lines 20-39]**;

a processor configured to obtain an Internet Protocol (IP) address of the gateway of the second private network from a Domain Name Server (DNS) connected to said public network with respect to the tunnel setup request by the host connected to the first private network **[Larson: Fig. 6, steps 601-603; a central certificate repository 602 or DNS; col. 10, line 64 – col. 11, line 15]**;

a Home-to-Home Tunneling Initiation Protocol (HTIP) processor configured to transmit and receive a tunnel setup request message in accordance with the tunnel setup request being transmitted through the public network interface or the private network interface, the tunnel setup request message containing a parameter necessary for the setup of tunnel between the first and second private networks **[Larson: Abstract; Fig. 3, Block 301, The request contains VPN parameter information, such as identity, host name, etc.; col. 6, lines 48-62; Fig. 6. A process flow of an exchange of parameters for setting up a VPN; col. 11, lines 24-62]**;

a VPN processor configured to operate as a server or a client according to the tunnel setup request transferred through the public network interface or the private network interface, and create a tunnel to said second private network **[Arrow: Fig. 7,**

VPN Processor 718; col. 9, line 41- col. 10, line 25; Larson: Fig. 4, VPN Processor 401; col. 8, lines 45-63]; and

a Network Address Table (NAT)/Network Address Port Table (NAPT) processor configured to translate a private IP address into an IP address or translating an IP address into a private IP address by using a NAPT protocol with respect to data packets transmitted between said public network and said private network, and translate private IP addresses in the VPN tunnel by using a NAT protocol if the VPN tunnel is set up between the first private network and the second private network **[Arrow: Fig. 7, Address Translation Unit 731; col. 10, lines 31-42; Fig. 8, step 816, col. 11, lines 37-48]**.

Arrow, in view of Larson, does not expressly teach the gateway comprising a web server or a private network Domain Name Server (DNS) processor to obtain an Internet Protocol (IP) address of the gateway of the second private network from a Domain Name Server (DNS) connected to said public network.

Chen teaches a network interface unit for use intermediate a LAN and a public or private network for establishing secure links to a VPN gateway **[Abstract & Fig. 4]**. The network interface unit comprises a GUI Server 450 for providing web pages to user at the client terminal having appropriate browser software and display functions **[Fig. 4, pars. 0060-0061]** and a private DNS server 415 **[Fig. 4, pars. 0067-0069]** to obtain an Internet Protocol (IP) address of the gateway of the private network from a Domain Name Server (DNS) connected to said public network.

It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to incorporate the private DNS server and the GUI server as taught by Chen into the combined invention of Arrow and Larson since they all are closely related to VPN gateway devices.

The motivation for implementing the private DNS server and GUI server into the VPN device would be to provide web pages for use in setup and configuration of network clients and to constrain client access to only authorized destinations as specified in the private DNS server so that a further measure of security is assured.

Regarding claims 3 and 8, Arrow, in view of Larson, teaches the VPN/HTIP processor is configured to send a tunnel setup request message to the gateway of the second private network if the tunnel setup request is transmitted from the host connected to the first private network **[Larson: Figs. 4 & 6, step 604; The VPN device at CompanyA.com uses the address information for contacting CompanyB.com by generating and sending a VPN tunnel proposal message to CompanyB.com via the Internet; col. 11, lines 16-23]**, and send an acknowledgement (ACK) to the gateway of the second private network if a response to the tunnel setup request is received from the gateway of the second private network **[Larson: Fig. 6, step 605; When all of steps, col. 11, lines 24-44, completed, the VPN device of CompanyB.com send a response/ACK to CompanyA.com. The VPN device of CompanyA.com receives the response/ACK and performs the similar process, i.e. sends a response/ACK to the VPN device of CompanyB.com; col. 11, lines 56-62].**

Regarding claims 6 and 16, , Arrow, in view of Larson and further in view of Chen, teaches the gateway comprises a web server or a middleware functioning as a web server function **[Chen: GUI Server 450]**.

Regarding claims 11 and 12, Arrow, in view of Larson, teaches the HTIP processor is configured to set the VPN processor as a VPN server, and send out a READY message, notifying the second private network that the setting of the VPN processor is completed to set up a VPN tunnel between the first private network and the second private network , if the ACK message is received from the second private network **[Larson: Fig. 6, step 606; It would be obvious in Larson that a Ready or equivalent message is exchanged between two parities since both parties are satisfied with their respective verifications of the VPN parameters contained in the tunnel proposal messages for establishing a VPN tunnel; col. 11, line 63 to col. 12, line3]**.

Regarding claim 13, Arrow, in view of Larson, teaches the HTIP processor is configured to analyze the tunnel setup request message or the response message from the second private network, and notify the second private network the tunnel request message **[Larson: Fig. 6, steps 604-605; col. 11, lines 24-60]**.

Regarding claim 14, Arrow, in view of Larson, teaches the HTIP processor is

configured to newly set parameters and parameter values contained in the tunnel setup request message **[Larson: Abstract; Fig. 3, Block 301, The request contains VPN parameter information, such as identity, host name, etc.; col. 6, lines 48-62; Fig. 6. A process flow of an exchange of parameters for setting up a VPN; col. 11, lines 24-62]**.

Allowable Subject Matter

5. Claims 9, 10 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent No. 6,079,020 to Liu discloses "Method And Apparatus For Managing A Virtual Private Network"
- US Patent No. 6,126,664 to Yanagidate et al. disclose "Address-Translating Connection Device"

- US Patent No. 6,944,167 to McPherson discloses "Method And Apparatus For Dynamic Allocation Of Private Address Space Based Upon Domain Name Service Queries"

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert T. Chou whose telephone number is 571-272-6045. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham, can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Albert T. Chou
July 20, 2007 AC

CHI PHAM
SUPERVISORY PATENT EXAMINER
7/25/07